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Dear Emily,

I have truly appreciated the discussions we have recently had. The problem is that the more I read the TAP review on methionine the more upset I became. I certainly do not have all the answers, but I am trying to be as objective as possible since I work with poultry producers of all sizes.

I will attend the NOSB meeting on June 6 in Lacrosse. I have also reviewed the TAP review on methionine, and the methionine comment letters found on the Internet.

I find the information presented by Dr. Keene and Dr. Klopp to be true and accurate. I am very disappointed in the Methionine TAP review because I feel there are many misleading and false statements in it. I will discuss my concerns starting at the beginning of the review.

First and foremost, there is one fact that must be addressed. In organic poultry feeds, methionine is the only amino acid whose requirement cannot be met through the intact protein content from the current supply of approved organic ingredients.

Until there is a supply of organic ingredients rich in methionine, the only choice is to add synthetic methionine to organic poultry feeds. The bottom line is that today synthetic methionine must be used if organic poultry meat and eggs are going to be produced.

Line 13 is misleading. Organic supplies are very tight. Protein sources are available but they are not rich enough in methionine to allow organic poultry diets to be formulated without added methionine. Before synthetic methionine was available animal by-products were used to supply methionine. A typical diet used to contain feather meal or tankage which was essentially a rendered combination of meat and bone meal plus blood.

Lines 20 and 21 insinuate that genetically engineered sources of methionine are available. I am not aware of any commercial supply of this type of methionine.

Lines 25 and 26 state that "Adequate levels of essential amino acids can be obtained in the diet of poultry fed adequate levels of intact protein from natural sources." This is true

for all amino acids except methionine. Adequate supplies of methionine rich organic ingredients are not currently available. If and when they are, synthetic methionine will not be required.

Line 31- Organic fish meal is not available, and even if it were it would need to be stabilized with ethoxyquin, which is not approved. There is a very limited supply of crab meal but there are some problems with this product.

Line 35 - Poultry can still be raised without synthetic amino acids; however except for an extremely limited number, organic poultry in the U.S. has not and still can not be raised without synthetic methionine due to the limited supply of approved organic ingredients.

Line 90 - "Methionine may be isolated from naturally occurring sources, produced from genetically engineered organisms". I am not aware of any of these products. The only products I am aware of that are available are from chemical synthesis.

Line 145 lists hormones as a component of feed rations. I know of no situation where hormones have been added to commercial poultry feeds.

Line 177 talks about the increase in use of crystalline amino acids since 1980. This increase has been almost entirely in lysine. There has been no appreciable increase in the amount of methionine that is added to a ton of poultry feed.

Lines 185 and 186 would allow the use of methionine currently due to the lack of viable organic ingredient supplies. I therefore see no reason to prohibit the use of methionine until this rule can be enforced.

Lines 204-215 - It is absolutely ridiculous to even insinuate that anyone would manufacture poultry feeds with a methionine level that would even approach the toxic level. Methionine is first limiting, therefore feeds are formulated with the lowest methionine content practical to control costs.

Lines 228-235 are totally irrelevant. The metabolism of sulfur amino acids in the cat is unique. This review is for poultry, not cats or rats.

Lines 239-259 are also irrelevant. The amount of methionine used in organic poultry rations is insignificant, compared to the total production of methionine

Line 282 - Broilers easily reach 4.4 lbs by 6 weeks not 8 weeks.

Lines 341-347 - I totally disagree. Klasing and Tsiagbe conducted research under controlled conditions that are more applicable to organic production than the high density high exposure conditions found in the integrated poultry industry.

I would encourage everyone to read Dr. Klopp's letter to Dr. Sideman. I have known Dr. Klopp for over 20 years. His credentials and integrity are impeccable. His comments on Poultry Health and Disease are very accurate and should not be taken lightly.

Lines 402-404 - I can assure everyone that a lysine level of .6% and a methionine level of .3% will not result in good results. This review should be based on research and facts not hearsay.

Line 406 - This statement is not true. NAS Nutrient Requirements Of Poultry are not designed to support maximum growth and production. In fact they do not necessarily represent the NAS committee's opinions at all. The only information that can be considered in establishing NAS recommendations must be from refereed Journals. Therefore, NAS recommendations often do not agree with the committee's true beliefs. I would like to quote from the 1994 NAS Poultry Recommendations for Broilers on page 27. " The values given in Table 2-6 are generally minimum levels that satisfy general productive activities and/or prevent deficiency syndromes." In general the NAS Poultry Recommendations are far below what the poultry industry has found to be required.

Line 421 indicates that casein is a potential alternative source of methionine. I do not understand how casein will help. The typical methionine plus cysteine requirement is 75% of the lysine requirement. Therefore to be an important contributor of methionine plus cysteine the methionine plus cysteine content should be more than 75% of the lysine content. The 1994 Poultry NRC lists the methionine plus cysteine content of casein as only 36% that of lysine.

Lines 426-436 - I find it very difficult to believe that the ingestion of earth worms is a significant contributor of nutrients to ranged poultry.

Reviewer 1 did an excellent job of reviewing the literature that was provided. The three questions raised in lines 485-491 focused on the key issues. My comments are in no way meant to be critical towards this reviewer. However, in fairness to everyone, I feel that I must point out some of the inaccuracies found in the literature. For those of you not familiar with research, I would like to point out that it is not unusual for research findings to be in direct conflict with other research findings. As a nutritionist in the poultry industry for over 20 years, my success is predicated upon my ability to evaluate conflicting research reports

For all practical purposes soybean meal is the only organic protein source currently available.

Lines 503 and 504 - Forget about the NAS and Merck guide, let's discuss practical poultry methionine requirements. The real requirement is for total sulfur amino acids (TSAA), which is methionine plus cysteine. Methionine must be 52-55% of the TSAA requirement. Most breeding companies selling layers recommend .72% TSAA for the peak feed. I believe a TSAA level of .65% is adequate for layers. Instead of 17% crude protein, without added methionine the crude protein would be 21%. Egg production

would decrease especially in hot weather. Organic eggs can be produced without added methionine. The real problem is broilers and turkeys. Broiler starter feeds today usually contain .90-1.00% TSAA and broiler finisher .70-.80% TSAA, dependent upon market weight. Turkey starter feeds usually contain 1.05-1.15% TSAA and the turkey marketer may contain as low as .55% TSAA.

An organic turkey marketer would not have to contain added methionine but the starter and growers would. I formulated an organic broiler grower without added methionine and the crude protein increased from 19% to 32%. This just is not going to work. Before methionine was available boiled eggs were crumbled and added on top of the turkey starter feed which already contained fish meal and alfalfa.

Listen everyone you can talk and philosophy all you want on what is organic, but today you cannot service your organic broiler and turkey markets without added methionine. If you prohibit it from organic feeds, you will force many producers to cheat and add methionine to the water. I am concerned that if you force producers to break the rules, the whole integrity of the organic program will be compromised.

Lines 506-508 - This quote is from page 10 of the NAS Nutrition Requirements of Poultry under variations and requirements for proteins and amino acids. Please see my comments for line 406. Yes indeed, this NAS publication makes conflicting statements. It really does not matter; the issue is adding methionine to organic poultry feeds.

Lines 527and 528 – Yes, I agree, however do not ignore the importance of the immune system. There are situations with primary breeders and specialty poultry markets were I have to dramatically reduce the growth rate. I do this by increasing fiber or providing imbalanced diets. I can imbalance diets by reducing the lysine level and produce marketable products. I cannot reduce the TSAA levels and produce a marketable product. Feather requirements and the immune system prevent low TSAA diets from being viable diets.

Lines 531-562 - Pasture based poultry can not maintain an adequate diet without supplemental nutrition. It appears that we are confusing amino acid content and amino acid balance. The TSAA content of 48% soybean meal is 1.39% and corn is .36%. Yet corn is considered a rich in TSAA's because it only contains .26% lysine. Soybean meal contains 3.00% lysine. The lysine to TSAA ration in soy is approximately 2:1. Milk and meat lysine to TSAA ratios are similar and therefore do not offer any real help. Blood meal, corn gluten meal and sunflower meal are the products that would be of help. The problem is that they are by-products, for all practical purposes you cannot increase the supply of a by-product by demand. The primary market must increase before there is an increase in the by-product market.

Lines 600-606 Methionine supplementation most definitely has a dramatic affect on the amount of nitrogen excreted, the amount of ammonia released to the atmosphere and the amount of nitrous amines leached into the water table from ranged birds. Nitrous amines are a very real public health concern. Due to the limited supply of organic ingredients

available today organic soybean meal is the primary source of protein and amino acids in organic poultry feeds. Therefore organic poultry feeds are adequate in all amino acids except methionine,

Lines 622-634 -Again adequate supplies of organic ingredients that would allow us not to add methionine are not currently available. If and when supplies of organic ingredients allow formulation of organic poultry feeds without methionine, then I would not have a problem not using methionine. To ban the use of methionine before such time could be devastating to the organic poultry community.

Reviewer 2 makes some good points. Again the problem is the lack of the necessary organic ingredients. The limit of .1% added methionine works for layers, but not for broiler and turkey starter feeds.

Reviewer 3 offers no help or suggestions to this problem whatsoever. His position is that rules are rules no matter how impractical they are or who they hurt. Obviously he would like to prevent the production of organic broilers and turkeys. Beef producers have had a long dislike for the poultry industry.

Comments on the conclusion. The truth of the matter is that poultry do not thrive on pasture and forages. It is indeed a great marketing tool only because the general public does not understand poultry production and nutrition. I agree that adding synthetic methionine is in conflict with organic principles. It is however no more conflicting than the addition of synthetic vitamins. The truth of the matter is that it is impossible to prevent the use of both animal products and synthetic vitamins, and produce poultry.

My Conclusions:

The current available supply of organic ingredients will not allow organic broilers and turkeys to be grown without the supplementation of methionine in the feed.

I am also concerned that those who have worked so long and hard to create the demand for organic poultry products are about to over run by the large companies. You have now increased the demand for organic poultry to such an extent that some of the large producers are now producing organic poultry. I will give you two current examples.

In the Watt Poultry USA May 2001 on page 8 one article is titled "Gold'n Plump Launches Organic Chicken Brand". "Gold'n Plump is the first major poultry company to market a line of certified organic chicken for sale in the fresh meat case at grocery stores, according to Tracy Miller, product manager at Gold'n Plump Poultry."

In the comment section is a letter from Dr. Klopp to Dr. Sideman. Dr. Klopp states that "Townsends, Inc. is a small commercial poultry company" and " While we have been researching our organic program for several years, we have just recently initiated the process for formal certification."

In the Watt Poultry USA January 2001 publication Townsends is ranked as the 18th largest and Gold'n Plump as the 24th largest broiler producer in the U.S. Townsend produces and processes 1.83 million broilers a week weighing 9.83 million lbs. While this may be small compared to Tyson's an annual production of 511 million pounds of broiler meat sure is not small compared to the organic poultry growers I work with. Gold'n Plump produces and processes 1.45 million broilers a week weighing 5.29 million pounds.

These large producers can dominate ingredient markets when supplies are tight. Banning the addition of methionine to organic poultry feeds will provide the large producers with a huge advantage compared to the small producer.

If you have any questions or need additional information please contact me.

Sincerely,

Bob

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